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PROTECTION OF FARM-STORED GRAIN IN WESTERN CANADA

By

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PROTECTION OF FARM-STORED GRAIN IN WESTERN CANADA *

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Farmers in Western Canada may suffer considerable losses of grain when high yields and low delivery quotas make it necessary to store grain on farms for long periods. Losses occur when insects, mites, or moulds attack stored grain, causing it to heat and go out of condition. These losses may be prevented by following a few simple rules and practices.

The cause of most grain storage problems in Western Canada is "tough" grain; grain that is uniformly dry will not spoil. Therefore, the farmer's first task is to bin grain as dry as possible in a clean, weatherproof, well-ventilated granary. Secondly, the grain should be examined periodically, because leaks, seepage, or condensation may introduce excessive moisture and cause local heating. Thirdly, if heating and insect infestation should develop, serious damage may be prevented by transferring the grain to another location in cold weather.

PREPARING THE GRANARY

A granary with a wooden floor above the ground is best for farm storage, and several small granaries are better than a large one for long-term storage. If "tough", damp, weed-infested grain must be stored, keep it in small bins and market it first. Carry out the following procedure:—

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1. Repair leaky roofs, windows, and doors to exclude rain and snow. If the granary floor is of concrete, cover it with moisture-proof paper.

2. Clean walls and floor thoroughly. Sprinkle a little hydrated lime over the floor and sweep it about to fill all cracks.

3. If insects or mites were present last year, coat the inside walls with whitewash containing one-quarter of a pound of lye per gallon.

4. Fill the granary to the plate only. Ample space between the grain surface and the roof must be provided for ventilation.

EXAMINING THE GRAIN

Grain that is stored in a dry condition may still become "tough" and infested. Moisture may enter the granary from outside as rain, snow, or ground moisture; and especially in large granaries, the moisture of the grain itself may condense in the surface layers of grain. To detect these danger spots, examine the grain as follows:—

1. Examine all grain stocks every two weeks.

2. Look for damp or crusted areas on the surface of the grain. Thrust the hand into the grain here and there to detect heating, and smell the grain to detect any abnormal odour.

3. Carry a metal rod or pipe of small diameter and push it three or four feet into the grain here and there. You will detect "tough" grain below the surface, for the rod will not pass through it so easily as through dry grain. Leave the rod for ten minutes at full depth in the centre of the bin, and on withdrawal test it for warmth on the back of the hand.

CONTROLLING INSECTS AND HEATING

When unfavourable harvesting conditions make it necessary to store "tough" grain, heating and infestation may develop despite all precautions. The farmer's greatest ally then is the cold winter weather prevalent on the prairies. To take advantage of low temperatures in the preservation of grain, one must expose it in a relatively thin layer, for bulk grain is a good insulator. Carry out the following measures:—

1. During cold weather transfer grain that is infested, mouldy, or abnormal in odour to a clean granary, a tarpaulin, or bare ground.

2. It is an advantage to clean the grain during the transfer. Use a portable elevator in conjunction with a sloping chute fitted with a six-foot section of wire screen. Such a chute is easily made to suit individual requirements. Or you may use a fanning mill, a combine, or a threshing machine (preferably with the cylinder removed). Use a strong air blast and a light feed of grain. Destroy the material removed.

3. The transfer and cleaning of out-of-condition grain in summer will reduce spoilage but is not as effective as when carried out in winter. "Tough" grain cleaned and cooled by transferring it under freezing temperatures may remain in good condition throughout the summer.

For further information write to the Division of Entomology, Dominion Department of Agriculture, Ottawa, Canada.

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